The University of Alberta
Edmonton
March 28, 1968

FOLIO

School of Environmental Design may be established here

Courses leading to the degree of Bachelor of Environmental Studies may soon be offered at both The University of Alberta and The University of Calgary. A School of Environmental Design (for more advanced studies) may be established at The University of Alberta.

The recommendations are the basis of a report received by the Universities Co-ordinating Council. The Council, composed of representatives of the three universities in Alberta, agreed to transmit the report to the General Faculty Councils of the three universities for consideration and possible implementation.

The report said, in part:

"The rapid increase in population, the accelerated pace of urbanization and the resultant high level of building construction make it abundantly clear that there is a need in Alberta for men and women trained in the art and science of creating man's environment.

"The committee is satisfied that the need for architectural studies in Alberta has already been established. However, we would emphasize the urgency of the matter because of the unwitting destruction of our natural amenities and the conviction that a profound environment can play a leading role in helping man to live a better life. . . ."

"The committee was impressed by the enthusiasm and attitude exhibited by the staffs of The Universities of Alberta and Calgary toward the subject of the study of man's environment. Both institutions saw the new faculty as a necessary and desirable part of their overall pattern of education. It is difficult to understand, in view of this vitality, how a School of Environmental Studies in Alberta has been so long delayed. . . ."

"We came to the conclusion that questions of anticipated faculties, student enrolment, population served by each campus, etc., balanced out and did not give a clear indication that one University was preferable to the other."

"It was noted that at Edmonton the related subject area is large and the standard of academic aspiration very high indeed. At Calgary, although the subject area is somewhat less, the attitude of mind seemed to be experimental and highly imaginative. . . ."

The recommendations, as transmitted to the General Faculty Councils, said in part:

1. The present academic offerings at both Edmonton and Calgary in subjects related to man's environment, are vital and each should be encouraged and then co-ordinated. The new school (at Edmonton) should concern itself with research.

2. The committee recommends that the educational pattern be considered in two parts; *one;* a basic study terminating with a Bachelor of Environmental Studies for three years; *two;* a specialized study of two or three years (according to the nature of the specialized study) ending with professional degrees.

3. The basic course leading to a Bachelor of Environmental Studies degree could be conducted at both Edmonton and Calgary, utilizing the established disciplines of engineering, fine arts, geography, social work, medicine, arts and science, household economics, etc.

4. Professional study at the second bachelor's degree level should be established in a new School of Environmental Design in Edmonton, since it should be contained within the most diverse academic environment possible in order that faculty be more rapidly established and given the best opportunity to achieve solid recognition.

The University of Alberta would also provide an ideal centre for advanced study and research, particularly in problems related to the North. The unique opportunities presented by the problems in the province could attract scholars from all over the world.

5. The School of Environmental Design should be prepared to widen its base according to developing technological needs as well as those associated with human behaviour, offering in addition to the usual professional degrees in architecture, landscape architecture, planning and interior design, others relating to environmental science. These may develop from such related disciplines as engineering, medicine, social work, law, etc.

6. The School of Environmental Design should develop a programme at the masters level.

7. Steps should be taken to appoint a dean or director as soon as practicable.

The committee said the new school should be "biased toward the needs of the province." Optimum size of such a school would be from 150 to 200 students, it said.

The committee was composed of representatives from the Royal Architectural Institute of Canada, the Alberta Association of Architects, The University of Alberta, The University of Calgary, the Conference of Canadian University Schools of Architecture, the Government of the Province of Alberta, and the Association of Professional Engineers of Alberta. It was appointed by the Universities Co-ordinating Council in July, 1967.

Staff news

F. W. WOOD, Associate Professor of Food Science, has been granted $21,400 by the Atomic Energy of Canada Limited for research on the irradiation preservation of milk and other food products.

Five professors from the University have received grants from the Canada Council to finance research projects in the social sciences and humanities.

DR. F. C. ENGELMANN, Professor of Political Science, has received $12,164 for research on recent political developments in West Germany.

DR. EDGAR HOWARTH, Associate Professor of Psychology, has received $6,820 to conduct research on the development of comprehensive personality tests adapted to Canadian subjects.

DR. MARTIN KATZ, Assistant Professor of History, will begin a study of the nineteenth century Russian historian T. N. Granovski with his grant of $4,650.

In addition to these, smaller grants were awarded to DR. RUTH GRUHN BRYAN, Assistant Professor of Anthropology, and to DR. PAUL SWARTZ, Associate Professor of Psychology.

The recipients at The University of Alberta were among 77 scholars and researchers across Canada who received grants totalling $458,715 recently. The total annual awards of the Canada Council for the current year is expected to exceed $12,000,000.

DR. LUDWIG VON BERTALANFFY, Professor of Theoretical Biology, has been elected to the Deutsche Akademie de Naturforscher.

It is the oldest scientific academy in existence, going back more than three hundred years.

DR MAURY VAN VLIET, Dean of the Faculty of Physical Education, has been re-elected President of the Western Canadian Intercollegiate Athletic Association at the annual meeting. Dr. Van Vliet is joined on the executive this year by two of his staff members, RUBY ANDERSON, Associate Professor, who will be chairman of the Ladies' Section, and ED ZEMRAU, Athletic Director, who will be chairman of the Men's Section.

A paper by three members of the faculty will be presented to the Cardiovascular Pharmacology Section of the Federation of American Societies for Experimental Biology Conference in Atlantic City, N.J., April 17.

The paper, "Ouabain Type Effects of Reduced Extracellular Potassium on the Action Potentials and Contractions of Human Cardiac Muscle In-vitro," was written by DR. K. PRASAD, Assistant Professor of Pharmacology (who will present the paper); DR. S. SINGH, Sessional Instructor, Department of Orthopaedic Surgery; and DR. J. C. CALLAGHAN, Clinical Professor of Surgery.

VIOLET B. ARCHER, Associate Professor of Music, has been nominated for the Alumni Association citation by the Yale School of Music, New Haven, Connecticut. The citation is presented annually for "distinguished service in the field of music." She will receive the citation at Yale next fall. Miss Archer has been commissioned to write a composition for the Saskatoon Symphony Orchestra, to be performed in about a year. The chorale improvisation, "O Worship the King," by Miss Archer was performed by HUGH BANCROFT at All Saints' Catherdral in Edmonton in late March. Later this spring, Miss Archer's rendition of the Twenty-Third Psalm will be included in the master recital of Patricia M. Neitzel, mezzo-contralto, at the Conservatory of Music in Milwaukee, Wisconsin.

DR. G. S. H. LOCK, Associate Professor of Mechanical Engineering, recently attended the American Institute of Chemical Engineers Advanced Seminar on "Engineering Analysis of the Functions of the Blood" in St. Louis, Missouri. The Seminar concentrated on review and discussion of developments in this relatively new area of research.

DR. ARTHUR KRATZMAN, Professor and Head of Elementary Education, presented two papers to the Saskatoon Public School Teachers' Institute, last month. His topics were ''Individualization: Some Points of Reference" and "Individualization: Continued."

DR. DAVID FRIESEN, Associate Professor of Educational Administration, spoke on "Professionalism" at the conference for Secondary School Teachers in Brandon, Manitoba, last month.

DR. PAUL KOZIEY, Assistant Professor of Educational Psychology, has been elected to a two-year term on the Board of Diretors of the Canadian Mental Health Association.

DR. JUANITA CHAMBERS, Associate Professor of Educational Psychology, will head a study group on neurologically and intellectually handicapped children for the Alberta Mental Health Association.

New books

DR. GEORGE A. ROTHROCK, Associate Professor of History, is the translator of *A Manual of Siegecraft and Fortification* by Sebastien LePrestre de Vauban, military engineer and Marshal of France during the reign of Louis XIV. The book, recently published by the University of Michigan Press, includes an introduction and bibliographical note by Dr. Rothrock.

DR. ULRICH TRUMPENER, Associate Professor of History, is the author of *Germany and the Ottoman Empire: 1914-1918,* which has recently been published by the Princeton University Press. The book presents a reappraisal of the relationship between the Germans and the Turks during the crucial years of World War I, when the two countries were allies.

Visitors

DR. B. GIOVANELLA, McArdle Laboratory for Cancer Research, University of Wisconsin, addressed a Seminar of the McEachern Laboratory for Cancer Research, the Department of Microbiology and the Department of Biochemistry, March 19. His topic was "A New Method for Nonaqueous Isolation of Cell Nuclei."

DR. R. I. WEED of the Hematology Unit, Department of Internal Medicine and Department of Radiation Biology and Biophysics, University of Rochester School of Medicine and Dentistry, addressed the Biochemistry Department Seminar on March 14. His topic was "Erytrocyte ATP and Calcium as Determinants of Cellular Deformability and Life Span."

PROF. A. ZYGMUND, Department of Mathematics, University of Chicago, addressed the colloquium of the Department of Mathematics February 28 and 29. His topics were "On Certain Lemmas of Marcinkiewicz and Carleson" and "Singular Integrals."

Visitor from Romania

A distinguished mathematician-scientist from Romania is a Visiting Professor for six months in the Department of Mathematics. During his visit DR. DUMITRU MANGERON, Professor of Theoretical Mechanics since 1959 at the Polytechnic Institute of Iasi, Romania, will work in close association with DR. M. N. OGUZTORELI, Professor of Mathematics.

Dr. Mangeron holds degrees from the University of Aisi and the University of Naples and has done post-graduate work at the Institute of Applied Calculus, National Research Council, Rome; and at the Mathematics Department of the University of Gottingue.

He has published more than 200 research papers on mathematical analysis and rational mechanics and more than 70 papers on the history of mathematics and mechanics. He has also written more than 800 reviews of books and scientific papers and has been active in the editing and publishing of numerous scientific journals.

He holds memberships in many European scientific societies including groups in France, Italy, Germany and Romania.

Friends of the University hold annual meeting

The Friends of The University of Alberta held their annual dinner on Monday, March 25, in Lister Hall.

MRS. C. E. LEARMONTH, President of the organization, noted in her annual report that during the past year, the Friends had continued their contribution to the Library and to maintenance of a scholarship program, had supported the Boreal Institute, and assisted several student activities. They made a special donation to the Golden Bears Band, to permit them to go to Toronto for the College Bowl football game where Alberta defeated McMaster University.

Reports were also presented by the Treasurer, ROBERT CHAPMAN, and the Chairman of the nominating committee, JOSEPH KATZIN.

DR. JOHN E. BRADLEY, Chairman of the Board of Governors, was guest speaker for the evening. He discussed the continuing problems of finance and communication faced by universities in Canada, and by The University of Alberta. Universities are and will be competing with several other areas of pressing need for priority in the expenditure of public funds, he stated.

While voluntary private "gifts" to the University are increasing in importance, the real need is for a policy change that will place higher education well up in this list of priorities. "Our people, the Government, will have to make a deliberate choice for the scale of expansion they are prepared to finance in the field of higher education," he said.

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Successful bid announced

Jason Construction Ltd., Calgary, has been awarded the contract for utilities services in the Clinical Science Building, the first major building of the University's Health Sciences Centre.

The successful bid was $159,893. The Department of Public Works received five other bids, ranging as high as $248,271. The announcement was made by The Honourable F. C. COLBORNE, Minister of Public Works.

Development guide issued for expanding departments

The Campus Development Office has issued a "Guide for the Preparation of a Detailed Program," a 23-page booklet on the procedures for arranging a building project on campus. The purpose of the Guide is to advise faculties and departments how to present the need for a new building, an addition or a new facility for consideration by the appropriate committees and the Board of Governors.

It includes a flow chart outlining the 35 steps necessary for the approval of such a project, and an appendix of the eight forms which must be completed in order to secure approval at the various levels. A second appendix outlines the suggested space standards by which a faculty or department can document its need for the additional space.

The guide has been distributed to all deans, directors, department heads, and certain other administrative officers. Copies are available in the Campus Development Office.

Procedure for visiting speakers outlined

The Dean's Council has asked that a notice be published, reminding the academic staff that there is a procedure which must be followed before a person other than a staff member may lecture in University facilities. The reminder comes in the wake of a few apparent abuses in the past months.

A visiting lecturer may be allowed to speak only by the dean or director of the faculty or school by which he is invited. The dean or director will act in consultation with the head of department or other person directly involved in proffering the invitation.

Such authority is placed with the General Faculty Council, according to section 34.1-(p) of *The Universities Act*. The General Faculty Council has in turn delegated this authority to the individual deans and directors.

Welcoming hand requested for foreign students

MAJOR R. C. W. HOOPER, Dean of Men and Foreign Student Adviser, has asked for the help of staff members and senior graduate students to orient the foreign students who will arrive in Edmonton this summer.

Volunteers will be asked to meet the students on arrival and to offer them whatever aid might be necessary so that they can settle in and find accommodation with a minimum of confusion.

About 200 new students are expected, from countries as widespread as Malaysia, Ghana, and Switzerland. Anyone who is willing to help is asked to contact Major Hooper at local 3483.

Observatory in use at Devon

The University Astronomical Observatory near Devon is now in operation. The 12-inch reflecting telescope, augmented by sophisticated electronic equipment, makes accurate intensity measurements of the stars.

DR. E. H. PINNINGTON, Assistant Professor of Physics, has been awarded a grant of $1,000 by the Observatories Branch of the Federal Department of Energy, Mines and Resources, for research. He is now studying the intensity variations of extrinsic (eclipsing) and intrinsic variable stars.

This is the first time a grant has been given to the University for this type of research.

Programmers need something to program

Several students trained in the Faculty of Education to program the IBM 1500 Computer Instructional System are available for summer or winter employment. Anyone interested in making use of their talents should contact DR. STEPHEN HUNKA, Professor of Educational Psychology and Director of Educational Research, at local 3763.

SACU reports on progress

The Service for Admission to College and University—SACU—was established almost two years ago to attempt to devise uniform admission examinations for use by Canadian colleges and universities.

It has recently published its first *Bulletin*, outlining the progress it has made.

A NEW APPROACH TO A NATION-WIDE PROBLEM

Education in Canada is not an easy problem. Our relatively small population of 20 million is scattered from sea to sea across a stretch of land some 3,500 miles long, with some elements dispersed from the U.S. border to the Arctic. This population is not only divided by physical barriers but also by linguistic, economic, social, political, religious and racial differences. The country is further separated into ten provinces which are sovereign states in several domains, one of which is education. The unrestricted diversity of our school structures, systems, curricula, admission procedures, and standards, coupled with an impressive growth of our school age population, led the Standing Committee of the ten Ministers of Education and the Association of Universities and Colleges of Canada to create, after four years of careful study, the Service for Admission to College and University.

ORGANIZATION

The Service, incorporated in May, 1966, is a non-profit nation-wide organization with, as members, colleges and universities, education departments of the ten provinces, and other national bodies interested in education. The membership of its General Assembly and Board of Directors is inter-provincial and inter-university; both groups have equal voting power and both English and French are official languages. SACU has an Executive Committee, and permanent headquarters, established in Ottawa in May, 1967.

OBJECTIVES

As Edward S. Noyes said of SACU's big brother, the College Entrance Examination Board, of which he was Vice-President: "Once the organization is on its feet, there are a million educational advantages which could not otherwise be exploited." Indeed the tasks involved are so numerous, so complex and so huge that SACU cannot undertake broad advances on all fronts; priorities have to be assigned in accordance with our human and financial resources.

The general purpose of the Service is to provide assistance, co-ordination and research to facilitate the transition of students from the secondary to the tertiary level of education, and to help meet the growth and changes in higher education.

Assistance—SACU's most immediate aim, as stated in its by-laws, is "to arrange for the development and administration of suitable scholastic aptitude and academic achievement tests through not less than two test service centres; at least one located in the province of Quebec for French-speaking candidates, and at least one located in a province or in provinces other than Quebec for English-speaking candidates."

It has never been suggested or implied that these tests should replace existing entrance standards or be used as rigid single evaluation instruments; rather they are intended to provide an additional measuring device common to all Canadian or foreign applicants in a given year, and which will be interpreted by the colleges and universities in the way most suitable to their individual requirements.

Co-ordination—It is SACU's firm intention to try to bring together educational administrators and professional teachers wherever they are in government offices, in high schools or on college or university

campuses, and to persuade them to view their jobs as part of a continuous process in order to enable students to move steadily forward to a coherent and unified program of study with a continuous desire to learn at a rate commensurate with their ability.

Teachers, principals, superintendents, education civil servants, counsellors, guidance officers, admission officers, registrars, heads of departments, and deans are all parts of this continuous process. The introduction of aptitude and achievement tests will definitely not solve all the difficulties in the educational process, but their measurement and evaluation contribution should help high school, college, and university teachers and counsellors to work more closely together without the imposition of a deadening uniformity, towards the ever-elusive goal of academic co-ordination from Newfoundland to British Columbia, as well as between Canada and the United States.

Research and Development—At present SACU is concentrating on an initial test development program: one scholastic aptitude and one mother-tongue achievement test in each of English and French. These tests will be administered first in January, 1969, for entry to college and university in the following September. Similar forms will also be available in 1970 for January and May administration.

For the second stage of the SACU program, feasibility study and design committees, consisting of representatives from each province, have been appointed and are already working on a tight schedule. These committees, both English-and French-speaking, are now studying each province's subject curricula; they are expected to present their reports by the end of July, 1968.

Test development committees will then be assigned the tasks of producing the scholastic achievement tests by September, 1970. The aptitude test and the battery of achievement tests will be administered for the first time in January, 1970, for registration the following September.

The following committees have been established:

Standing committees have been organized on guidance, admission, membership and examinations.

Test development committees have been established for the scholastic aptitude test, the *test de scolaptitudes,* the achievement test in English, and the *test de connaissance en français.*

Test design committees are working toward tests in French and English in mathematics, physics, chemistry, the social sciences (history and geography), English as a working language, *français langue de travail,* English as a second language, and *français langue seconde.*

This project alone is quite expensive. At least half a million dollars is needed to realize such a development program. The amount of work it entails is very great. However, the need for these tests is urgent, and SACU is confident in attaining its objectives.

The service for Admission to College and University is located at 151 Slater Street, Ottawa 4.

String quartet offers final concert

The HUNGARIAN STRING QUARTET will make their final concert appearance at the University at 8:30 p.m. in Convocation Hall on Sunday, March 31. The concert will include Haydn's "Quartet in F Major", Bartok's "Quartet Number 6," and the "Quartet in C Sharp Minor" by Beethoven.

They will also make a public appearance in a lecture-recital, on Wednesday, April 3, at 8:30 p.m., in Convocation Hall. The last of a series of three, it will deal with Bartok's quartets.

The Quartet is now completing its month of residency in the Department of Music. Its members are Zoltan Szekely, violin; Michael Kuttner, violin; Gabriel Magyar, violoncello; and Denes Koromzay, viola.

Chemistry of nitrogen to be discussed

A British chemist, JOSEPH CHATT, Corday Morgan Lecturer of the Chemical Society, Director of the Agricultural Research Council's Unit of Nitrogen Fixation, and Professor of Chemistry at the University of Sussex, will speak at 8:15 p.m. on April 11 in Room V107 of the Chemistry-Physics Building. Professor Chatt is an authority on the chemistry of transition metals. His talk will describe recent work carried out on the chemical mechanism of the biological fixation of nitrogen and is entitled, "The Chemistry of Nitrogen Fixation."

Weather to be subject of lecture

The Alberta Centre of the Canadian Meteorological Society will sponsor a lecture by DR. AMOS EDDY, Professor of Meteorology at the University of Texas, on Friday, March 29 at 8:00 p.m. in Room 2-99 of the Henry Marshall Tory Building. He will speak on "Objective Weather Analysis."

Dr. Eddy, "a Canadian meteorologist in exile," has made notable contributions to graphical and numerical weather analysis. The public is invited to attend the lecture.

Biochemistry seminar

DR. DAVID O. TINKER, Professor of Biochemistry at the University of Toronto, will conduct a seminar in the Department of Biochemistry on "The Isolation and Some Properties of Phospholipase A," on Monday, April 1, in Room 4114 of the Medical Sciences Building, at 4:30 p.m.

Computing Science seminar

"Internal Logic Description of the IBM/360/85" will be the topic of a Department of Computing Science Seminar to be held Wednesday, April 10, at 3 p.m. in Room V-102, Physics-Computing Science Building. K. CAMERON, Account Representative, International Business Machines, will be guest speaker.

Faculty Club

The housewarming celebration of the Faculty Club, originally scheduled for Saturday, March 30, has been postponed because the rugs have failed to arrive.

However, the Faculty Club will maintain a festive air even in the absence of an official occasion. Harry Boon and his Band will entertain as announced.

Spring tea

The Faculty Women's Club will hold their Spring Tea in the Faculty Club from 2:30 to 4:30 p.m., Saturday, April 6. All women on the faculty and all wives of faculty members are invited to attend.

Personal notices

Staff members may forward notices to reach the Editor two weeks prior to publication. They must be typed, and not exceed 35 words (including heading). Advertisements received will be published at the Editor's discretion.

WANTED TO RENT—One or two bedroom duplex in the University area. With stove and refrigator. For June 1. Contact Patricia J. Coffman, Faculty of Law, local 3350.

WANTED TO RENT—Any persons on sabbatical during 1968-69 who would like to rent their house, please contact Michel Queyrane, Department of Romance Languages, local 3899, or telephone 433-9835.

FOR RENT—Furnished home, three bedrooms, study, three bathrooms, two fireplaces, double garage. Appliances include dishwasher, automatic washer and dryer. Near White Mud Park. Contact L. F. L. Clegg, Department of Food Science, local 3491, or telephone 434-7120.

FOR SALE—Two-storey house with three bedrooms and study, in Capitol Hill ten minutes from the University. Landscaped. Available in July. Price $31,000. Contact R. C. Elwood, Department of History, local 4134, or telephone 482-3506.

FOR SALE—Three-bedroom brick bungalow on corner lot in Inglewood. New broadloom, fireplace, sun porch, attached garage. Contact Richard R. Faryon, Department of Extension, 439-2021.

WANTED TO RENT—Furnished suite or house, 2 or 3 bedroom, near University. For faculty member and family joining the staff in September, for one year. Contact Dr. G. C. Gidley, Department of Chemistry, local 4378.

WANTED TO RENT—A house, preferably in the University area, for at least one year from May. Contact Dr. R. B. Bryan, local 4349, or 439-6947.

FOR RENT—Modern bungalow on attractive crescent. Large livingroom, kitchen with appliances including dishwasher, two bedrooms each with twin beds. Available July 20, 1968, to April 20, 1969. Contact Mrs. A. J. Cook, local 3826 or 482-1817.

TO SUBLET—months of May through August. Large one-bedroom furnished apartment at 9835 106th St., includes color television, linen, dishes, parking, and laundry equipment. $145 month. D. Thompson, local 3954.

A **FOLIO** *Supplement*
March 28, 1968

The next five years—government allotment vs. University needs

DR. WALTER H. WORTH, Vice-President for Planning and Development, addressed the Senate of the University on February 22 on the subject of present and future space needs of the University, and how far the announced Government allocation will go towards meeting them.

Over the next five years the Government of Alberta will make available $175,000,000 for the three universities in the province. Of this sum, The University of Alberta expects to receive $105,750,000.

Projected expenditures during the next five years, based on this allotment and on present construction commitments, will decrease sharply. Capital expenditure will be $30,500,000 in 1967-68, and will level off at $17,000,000 for each of the last three years of this period. Enrolment figures, however, will continue to surge upward.

Capital expenditure and student enrolment for the Edmonton campus during the past five years are shown below. The average annual expenditure per student during this period was $1,296.

Year	*Capital Expenditure*	*Student Enrolment*
1962-63	10,470,542.09	7,434
1963-64	10,758,306.82	8,203
1964-65	5,579,242.20	9,357
1965-66	11,763,720.71	10,259
1966-67	21,791,817.84	11,489
Total	60,363,629.66	46,742

Capital expenditure and student enrolment until 1971-72 are projected below. The average annual expenditure per student, $1,364, is actually somewhat less than during the previous five years, due to inflation.

Year	*Capital Expenditure*	*Student Enrolment*
1967-68	30,500,000	13,027
1968-69	24,250,000	14,200
1969-70	17,000,000	15,525
1970-71	17,000,000	16,705
1971-72	17,000,000	18,080
Total	105,750,000	77,537

The expenditure per student figures are significant, because undergraduate facilities are becoming more complex and costly, and,

The space pinch

Which faculties will suffer most from the shortage of funds for new construction at the University? According to figures prepared by Dr. Worth's office, Education will be in the worst position in 1971-72, and six other faculties will each need more than 100,000 square feet.

In the table below, faculties and schools are ranked in order of their anticipated space deficit in 1971-72. Figures are also given for present space and deficits, and confirmed construction during the next five years. (Readers are cautioned that in the table below, present space requirements are based upon formula space only, and future requirements on formula plus non-formula space).

Faculty or school	*Space available 1967-68*	*Space required (formula space) 1967-68*	*Deficit 1967-68*	*Construction commitments to 1971-72*	*Space required (formula plus non-formula) 1971-72*[1]	*Space deficit 1971-72*[1]
Education	117,200	129,200	12,000		408,000	290,800
Engineering	220,000	220,000			396,000	176,000
Medicine	111,200	290,800	179,600	135,500	416,000	169,300
Arts (including Psychology)	229,000	215,400	+13,600[2]	45,000	432,000	158,000
Science (including Geography)	362,600	450,600	88,000	226,000	741,000	153,400
Physical Education	103,600	128,200	24,600		239,000	134,400
Dentistry	40,600	59,800	19,200		168,000	127,400
Agriculture	80,000	106,000	26,000		157,000	77,000
Law	10,000	10,000			72,000	62,000
Pharmacy	21,400	28,500	7,100		77,000	55,600
Business Administration	14,000	26,950	12,950		54,000	40,000
Rehabilitation Medicine	15,100	18,100	3,000		53,000	37,100
Household Economics	25,000	29,500	4,500		42,000	17,000
Nursing	5,100	22,500	17,400	9,000	25,000	10,900
Total	1,354,800	1,735,550	407,950	415,500	3,280,000	1,508,900

1 Or, for a registration of 18,900 full-time day students.
2 The new Henry Marshall Tory Building is not yet fully utilized, and some Arts departments occupy Garneau houses with ample, but inefficient space.

as well, the University is becoming more and more involved in graduate education, which requires much more expensive facilities than are necessary for undergraduate teaching.

The University's construction commitments for 1967 to 1972 are presented in an adjoining box. It is noteworthy that, with an estimated Government allocation of $105,750,000 and estimated commitments of $86,350,000, only $19,400,000 remains for additional construction—particularly the North Garneau development.

Actual "formula space" (academic and administrative offices, classrooms, laboratories, and the like) this year equals 1,354,800 square feet. According to space allowances adopted by the University and approved by the Universities Commission, the formula space required for the present enrolment is 1,735,550 square feet. Thus the current deficit in formula space is 380,750 square feet.

This deficit will increase as the student population grows. In order to accommodate a student enrolment of 18,900, the University must increase its formula space from 1,354,800 to 2,910,000 square feet; its "non-formula space" (theatres, library areas, specialized research laboratories, gymnasiums, etc.) from 549,200 to 1,148,000 square feet; and its total usable space from 1,904,000 to 4,058,000 square feet.

Space needs for 18,900 students rest on the assumption that the growth patterns predicted in the academic plan will hold true; 18,900 students could be expected in 1971-72. However, since the government has announced that a fourth University will not be established for the immediate future, enrolment here will likely reach 18,900 by 1970-71.

In short, the university must more than double its present space to accommodate an enrolment it expects to meet and surpass within the next five years.

$86,350,000 of the Government's announced allocation of $105,750,000 will be required for the construction to which we are committed (and much of which is under way). Only $19,400,000 is available for what would be expected to cost $90,000,000 . . . the University will face a space deficit of 1,100,000 square feet—costing $70,000,000—within five years.

This space deficit is the equivalent of seven Henry Marshall Tory Buildings.

Where will the money go?

The Government of Alberta has indicated that $105,750,000 will be available for capital expenditures at The University of Alberta for the five year period, 1967-68 to 1971-72. That sounds like a lot of money, but most of it is already committed to buildings now under construction, or about to be built. Less than a fifth of it, $19,400,000 is available for additional construction, including the work to be done in the North Garneau area. The University's projected building program for the five year period, in relation to government allocation and present commitments, follows.

Estimated government allocation				$105,750,000
Estimated commitments 1967-68 to 1971-72				86,350,000
Expenditures 1967-68			30,500,000	
Construction committments 1968-69 and 1969-70			28,200,000	
Continuing	*1968-69*	*1969-70*		
Biological Sciences				
Phase 1	2,000,000	800,000		
Phase 2	3,250,000	1,000,000		
Phase 2a	1,500,000	1,000,000		
Clinical Sciences	5,000,000			
General Services	700,000			
Maintenance garage	20,000			
Old SUB alterations	45,000			
Farm development				
dairy research	300,000			
lagoon	10,000			
vivarium	175,000			
other	200,000			
Mackenzie Hall (financed by mortgage, $2,300,000)				
New				
Biological Sciences, Phase 3	2,000,000	1,400,000		
Cameron Library, North Wing	500,000	1,500,000		
Law	500,000	3,700,000		
Physical Education, addition	850,000	1,200,000		
Planning	550,000			
	17,600,000	10,600,000		
Commitments for land and improvements, alterations, furniture, and equipment, 1968-69 to 1971-72			27,650,000	
Funds available for additional construction, 1969-70 to 1971-72				19,400,000